

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD

PRESCRIBED BURNING

(Acre)
Code 338

DEFINITIONS

Applying controlled fire to a predetermined area.

wetlands, roads, and constructed firebreaks are important to the design and layout of this practice. (See Firebreak, Code 394)

PURPOSE

This practice may be applied in a conservation management system as a component to address one or more of the following:

1. To control undesirable vegetation.
2. Prepare sites for planting or seeding.
3. Control plant disease.
4. Reduce wildfire hazards.
5. Improve wildlife habitat.
6. Improve forage production quantity and/or quality.
7. Slash and debris removal.
8. Enhance seed and seedling production.
9. To facilitate distribution of grazing and browsing animals.

3. Notify adjoining landowners within the area prior to burning.

4. Liability and safety precautions are to be planned before the burn and monitored during the burning.

PLANS AND SPECIFICATIONS

A burning plan shall be prepared for each site. A diagnosis of the need of fire should be first determined, followed by a prescription of the kind of fire to be used. Adequate preparation should be made and the prescribed treatment applied. An appraisal of the results should be made to judge the effectiveness of the burn.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all land uses where prescribed fire is used for the intended purposes.

Prescribed burning is a valuable management tool when carried out under the conditions necessary to accomplish certain planned objectives. This practice should not be used by untrained personnel and should only be practiced by those experienced in its use. The Louisiana Department of Agriculture and Forestry, Office of Forestry, has personnel with competence in burning to achieve forest management objectives. Woodland owners should be encouraged to seek their assistance before attempting to burn. Fire should be excluded from hardwood stands, hardwood bottoms in pine stands, and streamside management zones SMZs.

CRITERIA

This procedure, equipment, and the number of trained personnel shall be adequate to accomplish the intended purpose. The timing of the burn will be based on, as a minimum: relative humidity, wind conditions, air temperature, and fuel conditions. Comply with applicable laws and regulations, and follow Best management Practices (BMPs) developed for the state of Louisiana.

POLICY

The Natural Resources Conservation Service supports and encourages the use of prescribed burning on rangeland, pastureland, forest land, hay land, and wildlife land to meet specific resource management needs and objectives. The National Standard for Prescribed Burning is located in the National Handbook of Conservation Practices.

CONSIDERATIONS

- 1 Burning should be managed with consideration for wildlife needs such as nesting and feeding cover.
- 2 Existing barriers such as lakes, streams .

TRAINING, CERTIFICATION, AND AUTHORITY

NRCS encourages its employees to participate in prescribed burning training activities and workshops. Training is required to address both the principles of planning and safely executing the prescribed burn, as well as the effect that the fire will have on the plant and animal species and communities within the burn area.

Only trained and qualified personnel are authorized to provide assistance in planning or implementing prescribed burns.

Burns planned with NRCS assistance must adhere to all federal, state, and local laws regarding outdoor burning, fire control, and smoke management and air quality.

A detailed plan for the prescribed burn must be prepared. Required items to be addressed include, but are not limited to:

- \$ Location of the burn
- \$ Resource management objectives of the burn
- \$ Pre-burn vegetative description of the area
- \$ Prescription for climatic conditions required
- \$ Description of the burning method to be used
- \$ Discussion of pre-burn preparation
- \$ Firing sequence of area to be burned
- \$ Job assignments and descriptions of responsibilities for all persons assisting with the burn
- \$ Equipment and materials checklist
- \$ Job assignments and descriptions of responsibilities for all persons assisting with the fire patrol, containment, mop-up, and suppression of the burn.
- \$ Post-burn evaluation and management.

The landowner is responsible for obtaining all required permits and clearance as required by law. Adherence to the Clean Air Act is required for all prescribed burns. The national and state practice standards for prescribed burning will be used to guide the overall development of the detailed plan.

A. Objectives of Burning

1. Improve Woodland Management

a. Reduce fuel or rough

Large amounts of fuel accumulates in pine

stands. This can create a wildfire hazard which may destroy stands. Exclude fire from loblolly and slash pine stands until trees reach an average of 15 feet in height. Burn every 3-5 years if fuel build-up warrants.

b. Controlling undesirable vegetation

Winter burns are of little use in controlling hardwood competition because only that portion above the ground one inch or less in diameter is killed. Spring and summer burns will kill a higher percentage of root stocks of 1-2 inch hardwoods. Summer burns should not be used on sites where desirable pine trees are present because of intense heat build-up. Controlling brush on pine sites usually requires 3 burns at 3-year intervals.

c. Site preparation for pine regeneration

(1) Natural Seeding

(2) Planted Seedlings (See Forest Site Preparation, Code 490)

d. Brown spot control on longleaf pine.

2. Improve Wildlife Habitat

a. Marshes

(1) Considerations should be based on the following:

- \$ Objectives of the landowners
- \$ Rate of marsh erosion
- \$ Rise in sea level
- \$ Intertidal elevation
- \$ Accretion rate
- \$ The effect on the soil-building process, marsh stability, vegetative community conditions and rate of subsidence

(2) Brackish marshes can be burned to "set back" plant succession to obtain a more desirable and productive plant community.

(a) Ducks and Geese

Burn brackish marsh sites in the fall and winter (progressively, September-January) every second year. Burns should be about one month apart. Burn a given marsh only every second or third year for ducks.

(b) Muskrat

On areas where marsh hay cordgrass is dominant, burn from September to

February. Early fall burns result in maximum production of olney bullrush. Late fall and winter burns are best for saltmarsh bullrush.

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Growing conditions permit plants to make 4-10 inches of growth before grazing. Protect low condition ranges from fire.

(3) Fresh and intermediate marshes normally should not be burned except for limited special objectives such as woody brush control, rough removal near hunting blinds and water management.

(4) Saline marshes should not be burned for wildlife habitat improvement.

b. Uplands

(1) Upland wetlands

For ducks and geese, burn in early spring to encourage annual grasses and forbs. In upland duck fields, burn about every third year to remove excessive debris.

(2) Upland woodlands

Pine woodlands should be burned approximately every three years to increase food, diversity, reduce parasites and to some extent diseases, and regulate the composition, density and extent of ground cover. More frequent burning (annual or biannual) may be necessary in many areas to benefit early successional wildlife. Burning should be done in January and February, using the same procedures as for timber management.

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1) Pine Woodland

Timing

Burn from December to March

Do not burn all of the grazing unit in any one year.

Burn normally only once every 3 years.

Follow same precautions and specifications listed under timber management.

(3) Improve Forage Resources

(a) Marshes Fresh, intermediate, and saline marshes should receive special consideration prior to burning. Burning should only be used for: excess rough removal, livestock distribution or woody brush control.

1) Saltmarsh (saline and brackish)

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Timing-burn small acres in late summer and early fall, and progressively burn until February 1 as season progresses. Under proper grazing, marsh ranges will accumulate enough rough to burn every other year.

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Moisture Conditions Ground - surface should be covered with standing water for a good cover burn and to protect crowns of plants.

B. Weather Conditions

Conditions listed are primarily for winter burning in pine woodlands, but apply equally to burning for improvement of wildlife habitat and forage plants

1. Wind

Winds should be constant in direction and speed. These conditions usually occur in winter in high pressure areas, after a cold front.

a. Velocity

1) 5 miles per hour measured at a height of 5 feet in the stand.

2) 5-15 miles per hour when measured at a 20 foot high, open station.

3) Never burn when there is no wind. Fires will not move properly resulting in excessive butt and crown scorch.

b. Direction

Winds from the north-northwest and south-southwest are generally more dependable.

prescribed wind changes.

\$ Takes longer to burn designated areas.

2. Relative Humidity

General accepted range is 30-60 percent. A relative humidity of 20-30 percent is acceptable if a hot burn is desired or if adequate precautions are taken. A relative humidity of over 60 percent may not burn hot enough to accomplish the desired results except in young stands with large accumulations of fuel.

2. Strip Head Fire

This technique consists of running short head fires (burning with the wind) into a prepared baseline or previously burnt strip.

a. Advantages

- \$ Flexible. Can be used with shifting wind.
- \$ Can be used in all fuels and will burn flat fuels (hardwood leaves).
- \$ Fast and can get large areas burned quickly. Good for brown spot burns in longleaf and summer and winter hardwood control.
- \$ Cheaper since fewer fire lanes are needed.

3. Temperature

Temperatures from 20-50 degrees are considered the most desirable for winter burns. The possibility of slowing growth or killing desirable trees increases when temperatures rise above 50 degrees. Site preparation burns in summer should be conducted at higher temperatures.

b. Disadvantages

- \$ Can be used only with medium to large timber.
- \$ Should be used only when relative humidity and fuel moisture are relatively high.
- \$ Can be used with only light winds.
- \$ Requires cooler weather for successful winter burn.

4. Fire fuel Moisture

Fire fuel moisture is closely associated with relative humidity. Fuels are dry when relative humidity is low and damp when it is high. Preferred range of fire fuel moisture content is 10-30 percent.

5. Sources of Weather Information

Fire danger rating stations
U.S. Weather Bureau
Local observations
All should be used before and during burning.

3. Spot Fire

This technique is an exact procedure and requires considerable experience by the person conducting the prescribed burn. This is a series of small fires which burn in all directions. It consumes ground fuels so quickly that the individual fires do not attain the momentum to start a run. Timing and spacing are important.

C. Burning Techniques1. Back Fire

This technique consists of backing a fire into the wind. Easier and safer, provided there is a steady prevailing wind.

a. Advantages

- \$ Cheap; few fire lanes are needed.
- \$ Winds can be variable.
- \$ Allows fast area ignition.

a. Advantages

- \$ Can be used in heavy rough.
- \$ Can be used in small timber.
- \$ Can ignite a large area in a short time.

b. Disadvantages

- \$ Fuels must be uniform¹ and light to medium density.
- \$ Can be used only in large timber.
- \$ Creates hot spots if not careful.
- \$ Can be used only when temperature is low.

b. Disadvantages

- \$ Usually costs more since plowed lines are needed every 1-20 chains.
- \$ Not flexible after lines are plowed, if

4. Flank Fire

This technique consists of setting a line of fire that burns at right angles to the wind. It requires considerable knowledge of fire behavior. Its mostly used to secure the flanks of other fire and is seldom used.

a. Advantages

- \$ Cheap; few fire lanes are needed.
- \$ Allows fast ignition.

b. Disadvantages

- \$ Can be used only in medium to large timber.
- \$ Wind must not vary in any direction.
- \$ Fuels must not be heavy.

D. Precautionary Measures

1. Notify the Office of Forestry prior to burning or obtain their assistance.
2. Obtain the best possible information on weather.
3. Prepare al necessary firebreaks in advance.
4. Inspect fuel conditions thoroughly.
5. Notify adjacent landowners of the intent to burn.
6. When in doubt as to the behavior of a fire, make a fire test.

OPERATION AND MAINTENANCE

Operation and maintenance requirements are not applicable for this practice.

Reference:

A Guide to Fire Prescription, Merlin J. Distn,
USDA-Forest Service, 1995